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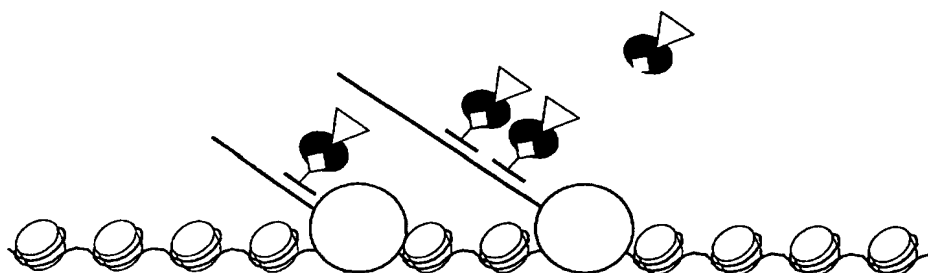
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: TAGGING AND RECOVERY OF ELEMENTS ASSOCIATED WITH TARGET MOLECULES



(57) Abstract: The invention provides a method for identifying elements associated with a target molecule comprising the steps of: (a) providing a probe capable of binding by specific molecular interaction to a predetermined specifically defined region of a target molecule, the probe associated with or capable of recruiting an enzyme; (b) adding a tag capable of being activated by the enzyme such that it can attach to elements in the vicinity of the enzyme; and (c) isolating elements having the tag attached thereto, wherein the defined region occurs once, twice, or in a low number of copies in the target molecule. Preferably the tag can attach only to elements in the vicinity of the enzyme.

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## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 03/00984

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G01N33/68 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	STEENSEL VAN B ET AL: "Identification of in vivo DNA targets of chromatin proteins using tethered Dam methyltransferase" NATURE BIOTECHNOLOGY, NATURE PUBLISHING, US, vol. 18, no. 4, April 2000 (2000-04), pages 424-428, XP002187507 ISSN: 1087-0156	1-4, 7, 14, 20, 21
Y	the whole document	3, 12, 13, 15-19
Y	EP 0 795 610 A (BECTON DICKINSON CO) 17 September 1997 (1997-09-17) abstract page 2, line 50 -page 3, line 1 page 3, line 25-45; example 1 --- -/-	3, 12, 13, 15-19

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*Z\* document member of the same patent family

Date of the actual completion of the international search

31 October 2003

Date of mailing of the international search report

11/11/2003

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## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 03/00984

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	VAN STEENSEL BAS ET AL: "Chromatin profiling using targeted DNA adenine methyltransferase" NATURE GENETICS, vol. 27, no. 3, March 2001 (2001-03), pages 304-308, XP002258763 ISSN: 1061-4036 abstract page 304, left-hand column, paragraph 1 -right-hand column, paragraph 1 page 306, right-hand column, last paragraph	1-4,7, 20,21
P,X	--- CARTER DAVID ET AL: "Long-range chromatin regulatory interactions in vivo." NATURE GENETICS, vol. 32, no. 4, December 2002 (2002-12), pages 623-626, XP002258764 ISSN: 1061-4036 (ISSN print) the whole document	1-23
T	--- LEBRUN ELEONORE ET AL: "A methyltransferase targeting assay reveals silencer-telomere interactions in budding yeast." MOLECULAR AND CELLULAR BIOLOGY, vol. 23, no. 5, March 2003 (2003-03), pages 1498-1508, XP002258765 ISSN: 0270-7306 (ISSN print) the whole document	1-21

# INTERNATIONAL SEARCH REPORT

application No.  
PCT/GB 03/00984

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 22, 23  
because they relate to subject matter not required to be searched by this Authority, namely:  
Rule 39.1(111) PCT - Scheme, rules and method for performing mental acts
2. ☒ Claims Nos.: 15-19  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 15-19

Present claims 15-19 relate to a product defined by reference to a desirable characteristic or property, namely hapten-labelled probe(s) capable of binding by specific molecular interaction to a predetermined specifically defined region of RNA of a gene. The claims cover all products having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such products. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the product by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the method using hapten-labelled probe(s) specific to the RNA of an intron of an active gene e.g. a probe directed to intron 2 near the 3' ends of the mouse beta-major globin primary transcript, prepared in example 1

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-14 completely and 22,23 partially

A method for identifying elements associated with a target molecule.

2. Claims: 15-19 completely and 22,23 partially

A method for identifying elements of chromatin associated with transcribing RNA.

3. Claims: 20,21 completely and 22,23 partially

A method for identifying elements associated with a target molecule.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

pplication No

PCT/GB 03/00984

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0795610	A	17-09-1997	EP 0795610 A1	17-09-1997